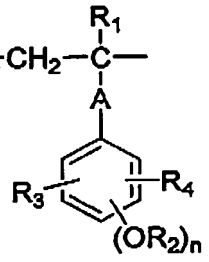
WHAT IS CLAIMED IS:

1. A negative-working resist composition for electron beams or X-rays comprising (A) a compound generating an acid and/or radical species by the irradiation of electron beams or X-rays, (B) a resin which is insoluble in water and soluble in an alkali aqueous solution, (C) a crosslinking agent causing crosslinking with the resin of component (B) by the action of an acid, and (D) a compound having at least one unsaturated bond capable of being polymerized by an acid and/or a radical.

2. The negative-working resist composition for electron beams or X-rays according to claim 1, wherein the resist composition further contains (E) an organic basic compound.

3. The negative-working resist composition for electron beams or X-rays according to claim 1, wherein the resin of component (B) is the resin having a repeating unit shown by the following formula (a):



(a)

wherein R_1 represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl or haloalkyl group which may have a substituent;

R_2 represents a hydrogen atom, or an alkyl, cycloalkyl, aryl, aralkyl, or acyl group which may have a substituent; R_3 and R_4, which may be the same or different, each represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl, cycloalkyl, alkenyl, aralkyl, or aryl group which may have a substituent; A represents a single bond, or a divalent alkylene, alkenylene, cycloalkylene, or arylene group which may have a substituent, or -O-, $-SO_2-$, $-O-CO-R_5-$, $-CO-O-R_6-$, or $-CO-N(R_7)-R_8-$; R_5, R_6, and R_8, which may be the same or different, each represents a single bond, or an alkylene, alkenylene, cycloalkylene, or arylene group, which may have a substituent, singly or a divalent group formed by combining the above-described group and at least one kind selected from an ether structure, an ester structure, an amide structure, a urethane structure, and a ureido structure; R_7 represents a hydrogen atom, or an alkyl, cycloalkyl, aralkyl, or aryl group which may have a substituent; and n represents an integer of from 1 to 3; and also plural R_2s, or R_2 and R_3 or R_4 may combine with each other to form a ring.

4. The negative-working resist composition for electron beams or X-rays according to claim 1, wherein the compound of component (A) is selected from the sulfonate compounds of sulfonium or iodonium.

5. The negative-working resist composition for electron beams or X-rays according to claim 1, wherein the compound of

component (A) is the sulfonic acid ester compound of N-hydroxyimide or a disulfonyldiazomethane compound.

6. The negative-working resist composition for electron beams or X-rays according to claim 1, wherein the crosslinking agent of component (C) is a hydroxymethylated, alkoxymethylated, or acyloxymethylated phenol compound.

7. The negative-working resist composition for electron beams or X-rays according to claim 1, wherein the crosslinking agent of component (C) is an alkoxymethylated or acyloxymethylated melamine compound or resin, or an alkoxymethylated or acyloxymethylated urea compound or resin.

8. The negative-working resist composition for electron beams or X-rays according to claim 1, suitable for electron beam irradiation under the accelerated voltage condition of at least 75 KeV.

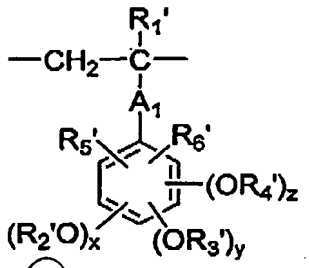
9. A negative-working resist composition for electron beams or X-rays comprising

(A) a compound generating an acid and/or radical species by the irradiation of electron beams or X-rays,

(B') a resin having at least one unsaturated bond polymerizable by an acid and/or an alkali, which is insoluble in water but soluble in an alkali aqueous solution, and

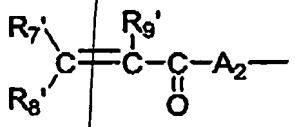
(C) a crosslinking agent causing crosslinking with the resin (B') by the action of an acid.

10. The negative-working resist composition for electron beams or X-rays according to claim 9, wherein the resin of component (B′) is a resin containing the repeating unit shown by following formula (a′);

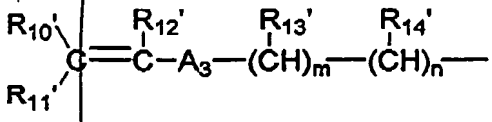


(a′)

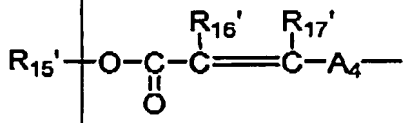
wherein R_1' represents a hydrogen atom, a cyano group, or an alkyl or haloalkyl group which may have a substituent;
R_2' to R_4' each represents a hydrogen atom, a group shown by the formula (b), (c), or (d) described below, or an alkyl, cycloalkyl, aryl, aralkyl, or acyl group which may have a substituent; and
R_5' and R_6', which may be the same or different, each represents a hydrogen atom, a hydroxyl group, a halogen atom, a cyano group, or an alkyl, cycloalkyl, alkenyl, aralkyl, or aryl group which may have a substituent.



(b)



(c)



(d)

wherein R_7' to R_{12}', R_{16}', and R_{17}' each represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl or haloalkyl group which may have a substituent;

R_{13}' and R_{14}' each represents a hydrogen atom, a halogen atom, a hydroxy group, or an alkyl, alkoxy, or acyloxy group which may have a substituent;

R_{15}' represents a hydrogen atom or an alkyl, cycloalkyl, aralkyl, or aryl group which may have a substituent;

A_1 represents a single bond, or a divalent alkylene, alkenylene, cycloalkylene, or arylene group which may have a substituent, or -O-, $-SO_2-$, $-O-CO-R_{20}'-$, $-CO-O-R_{21}'-$, or $-CO-N(R_{22}')-R_{23}'-$;

R_{20}', R_{21}', and R_{23}', which may be the same or different, each represents a single bond, or a divalent alkylene, alkenylene, cycloalkylene, or arylene group which may have an ether

structure, an ester structure, an amide structure, a urethane structure, or a ureido structure or may have a substituent;

R_{22}' represents a hydrogen atom, or an alkyl, cycloalkyl, aralkyl, or aryl group which may have a substituent;

A_2 represents a single bond, $-O-R_{21}'-$, or $-N(R_{22}')-R_{23}'-$;

A_3 represents a single bond, $-SO_2-$, or an arylene group which may have an alkylene structure or may have a substituent;

A_4 represents a single bond, a divalent alkylene, cycloalkylene, or arylene group which may have a substituent, or -O-. $-SO_2-$, -CO-. or $-CO-O-R_{21}'-$;

x, y, and z in the formula (a') each represents 0 or 1 and m and n in the formula (c) each represents 0 or an integer of at least 1, provided that in the formula (a'), at least one repeating unit has the group of the formula (b), (c), or (d); and two of R_2' to R_4', or one of R_2' to R_4' and R_5' or R_6' may combine with each other to form a ring.

11. The negative-working resist composition for electron beams or X-rays according to claim 9, wherein the resist composition further contains (D) a compound having at least one unsaturated bond polymerizable by an acid and/or a radical.

12. The negative-working resist composition for electron beams or X-rays according to claim 9, wherein resist the composition further contains (E) an organic basic compound.

13. The negative-working resist composition for electron beams or X-rays according to claim 9, wherein the compound of

component (A) is selected from the sulfonate compound of sulfonium or iodonium.

14. The negative-working resist composition for electron beams or X-rays according to claim 9, wherein the compound of component (A) is the sulfonic acid ester compound of N-hydroxyimide or a disulfonyldiazomethane compound.

15. The negative-working resist composition for electron beams or X-rays according to claim 9, wherein the crosslinking agent of component (C) is a hydroxymethylated, alkoxymethylated, or acyloxymethylated phenol compound.

16. The negative-working resist composition for electron beams or X-rays according to claim 9, wherein the crosslinking agent of component (C) is an alkoxymethylated or acyloxymethylated melamine compound or resin or an alkoxymethylated or acyloxymethylated urea compound or resin.

17. The negative-working resist composition for electron beams or X-rays according to claim 9, suitable for electron beam irradiation under the accelerated voltage condition of at least 75 KeV.